



Key Properties

Atomic Mass	[222]
Category	Noble Gases
State at 20°C	gas
Melting Point	-71°C
Boiling Point	-61.7°C
Density	9.73 g/L
Electron Config	[Xe] 4f145d106s26p6
Electronegativity	null
Year Discovered	1900
Discovered By	Friedrich Ernst Dorn

Did You Know?

- 1 It is a colorless, odorless, and tasteless radioactive gas that is naturally produced by the decay of uranium in soil and rocks.
- 2 Radon is the second leading cause of lung cancer worldwide, after smoking. It can seep into basements and buildings, accumulating to dangerous levels.
- 3 It is the densest known gas, about eight times denser than air.
- 4 Radon was once used in a form of radiotherapy called 'radon therapy', where people would sit in radon-rich mines or spas, a practice now considered extremely dangerous.
- 5 Because it is a noble gas, it does not form chemical compounds easily.

APPEARANCE

Radon is a colorless, odorless, tasteless, radioactive gas.

SUPERHERO PERSONA

"The Invisible Threat, a silent, unseen villain that can accumulate in basements and is a leading cause of lung cancer."

EVERYDAY CONNECTION

Radon has no everyday connection; it is a known household hazard.

POP CULTURE

Radon is a dangerous environmental hazard often featured in public health warnings.

Radon: The Invisible, Radioactive Gas

Radon is a colorless, odorless noble gas that is highly radioactive. It forms naturally when radium in rocks and soil decays. Though invisible, radon can pose serious health risks when it builds up indoors.

Why Is Radon Useful?

Radon's extreme radioactivity limits its uses, but it has had some niche applications:

Cancer Therapy (Historical): In the past, doctors used radon in a treatment called brachytherapy, where sealed tubes of the gas were implanted into tumors. This method is rare today because safer treatments exist.

Environmental Health: Radon can collect in basements and buildings, especially in areas with granite-rich soil. Testing kits help homeowners detect dangerous concentrations so they can take steps to reduce them.

Geological Research: Scientists use radon to study air circulation in the atmosphere and to help track geological faults.

Biological Role & Natural Abundance

Radon has no biological role. In fact, it is a carcinogen—after smoking, radon exposure is the second leading cause of lung cancer. It also contributes to background radiation on Earth and may have played a role in evolution by causing genetic mutations.

Radon is continuously produced as radium-226 decays, seeping out of rocks, soil, and groundwater. While rare in the atmosphere, it is measurable and detectable.

History of Discovery

1899: Ernest Rutherford and Robert B. Owens noticed a radioactive gas released from thorium. Around the same time, Marie and Pierre Curie detected a similar gas from radium.

1900: Friedrich Ernst Dorn reported that a gas collected inside radium ampoules.

1908: William Ramsay and Robert Whytlaw-Gray managed to collect enough radon to study its properties. They found it was the heaviest known gas and confirmed it was a new element, naming it radium emanation—later renamed radon.